

Integrating Water Management

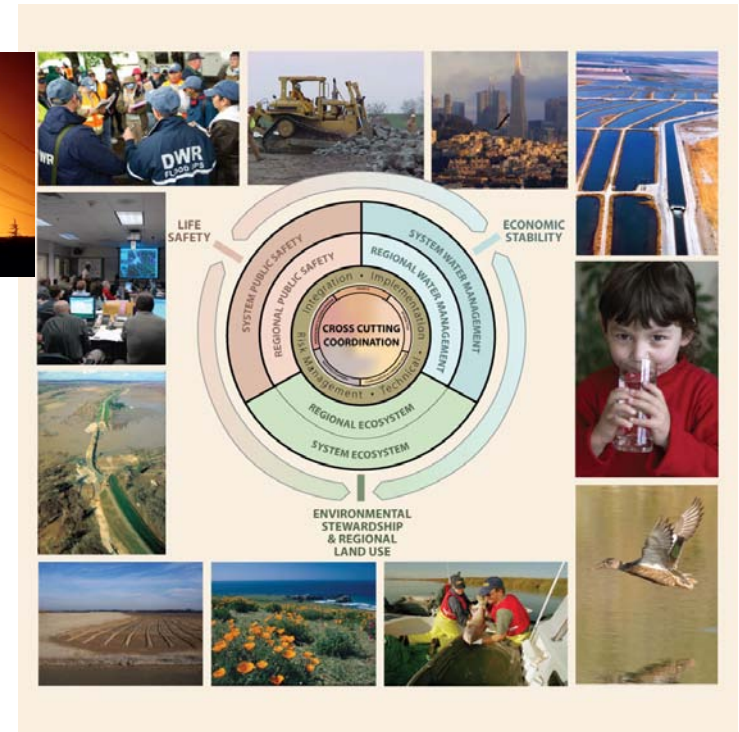
The Role of Integrated Water Management (IWM)



Gary Bardini, Deputy Director IWM

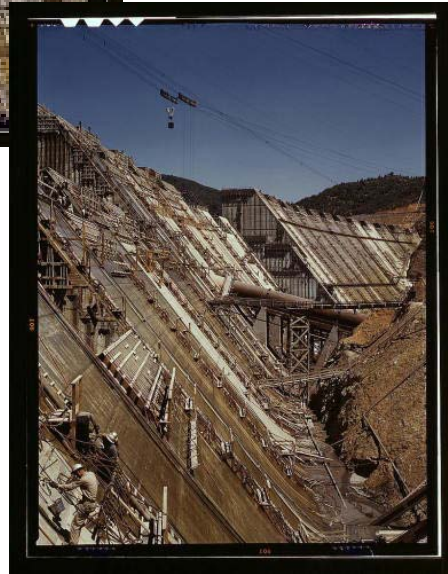
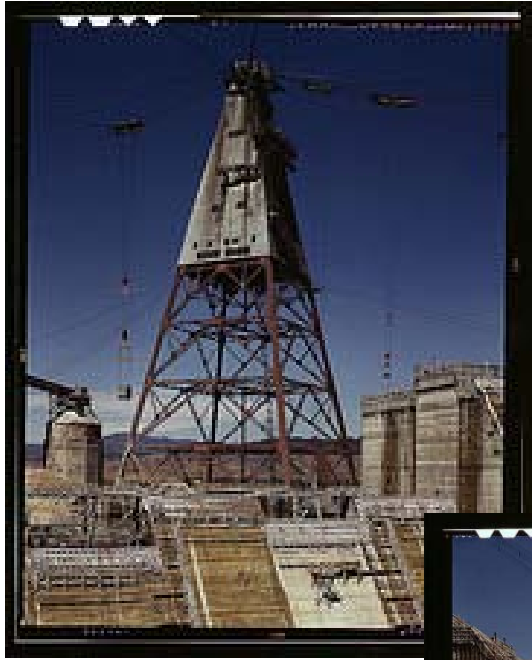
California Water Plan Plenary

September 12, 2012
Sacramento, CA



Integrating Water Management

Over the last century,
water development in
California has fueled
economic vitality and
made progress
achievable.



Shasta Dam under construction
Library of Congress

Integrating Water Management

Defining California's Water Challenges



Major system deficiencies put public safety, financial stability and economic well being of the State at risk of flooding.



California's Bay-Delta ecosystem is declining with many fish populations at record lows.



Water supplies from the Delta are less reliable. Aging infrastructure and growing population put more pressure on water systems.



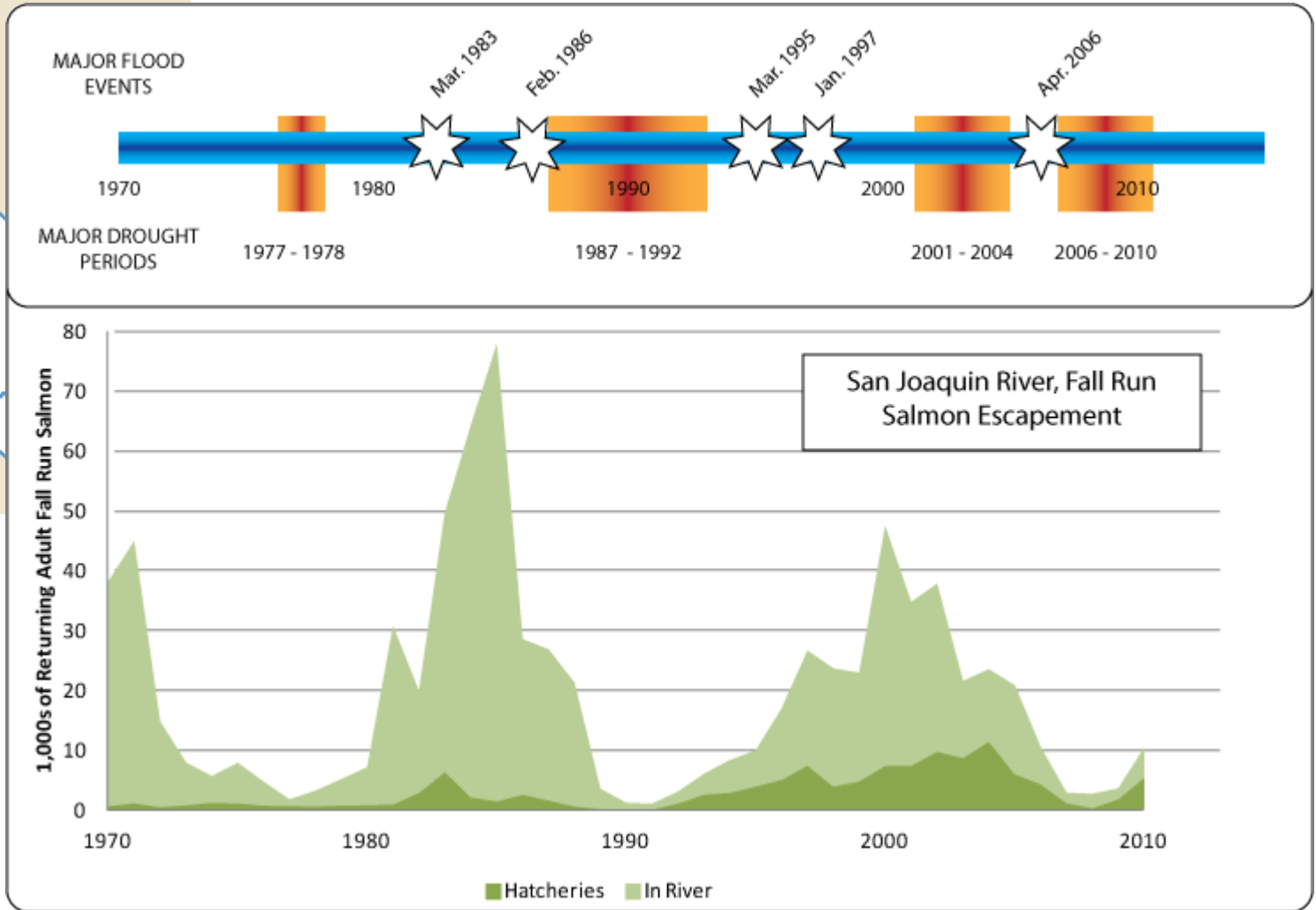
Multi-year drought has further stressed water supplies for all purposes. Reservoirs are low and groundwater levels are declining.



Climate change impacts, including less snowpack, higher flood peaks, and sea level rise, create new uncertainties.

Integrating Water Management

Problems & Opportunities



Integrating Water Management

Values associated with water management activities include:

Public Safety

- Making communities safe
- Planning ahead to achieve best collaboration
- Emergency planning and response

Environmental Stewardship

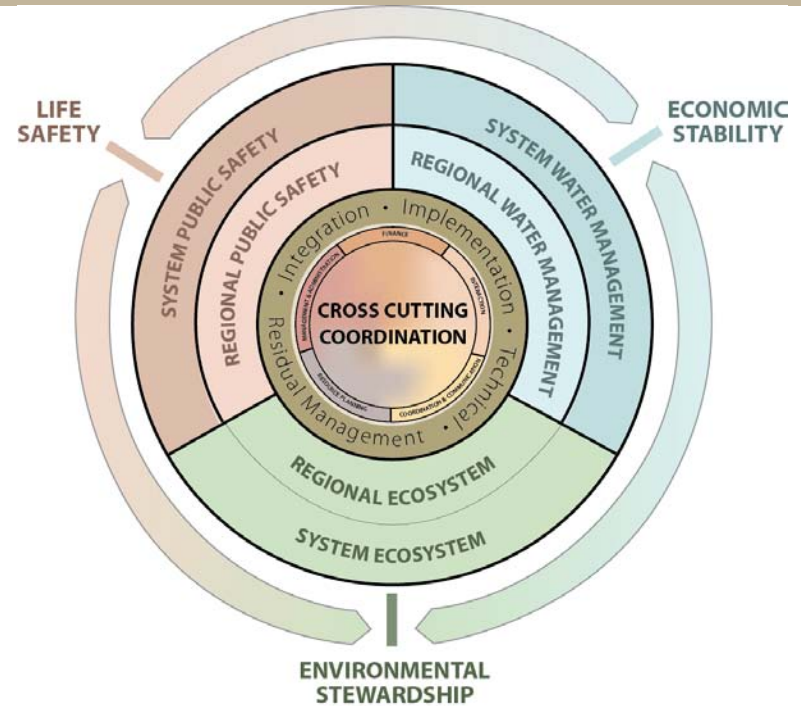
- Helping ecosystems thrive
- Creating healthier communities by enhancing the environment
- Responsible and reasonable balance between protecting people and the environment

Economic Stability

- Providing for our families' future
- Protecting businesses and investments
- Enhancing communities

Integrating Water Management

Aligning Programs & Initiatives towards *key values*



PROGRAM						COORDINATION
REGIONAL		SYSTEM				
Regional Public Safety		System Water Management		System Public Safety		Cross Cutting
INT	Statewide Flood Management Planning	INT	Delta Emergency Response SWAN	INT	Central Valley Flood Protection Plan	Interaction - California Water Plan
IMP	Regional Flood Management Plans QRM and Environmental Support USACE CVFPP Projects USACE CVFPP Studies Early Implementation Program Projects Flood Control Subventions Program Local Levee Assistance Program Stormwater Grants Delta Levee Subvention	IMP	System Reoperation Water Transfers IRWM Strategic Plan Interstate Water Management DHCCP	IMP	System Maintenance	Coordination & Communication Federal Advocacy Technical Publications
RM	Flood Emergency Operations Flood Project Integrity and Inspections Flood Risk Awareness Hazard Mitigation National Flood Insurance Program Dam Safety	TEC	Surface Storage Investigations SWP Operations Delta Special Projects	TEC	System Feasibility Studies Floodplain Evaluation & Delineation Geotechnical System Performance Assessments Systemwide Flood Benefit Evaluation	Resource Planning Project Management Support Program Delivery Plans
	INT	INT	INT			
	Regional Coordination		Water PIE IWM Economic Assessments Public Benefits Evaluation Water Recycling and Desalination Statewide Data Program		RM	Management & Administration Bond Management System Bond Accountability Climate Change Sustainability Indicators Framework Environmental Stewardship Business Administration
	IMP	IMP	Water Use Efficiency			
	Regional Partnership IRWM Planning & Implementation Grants Water Use Efficiency Grants Watermaster Services	IMP				
	TEC	IMP				
	CASGEM Land & Water Use Data CIMIS Conjunctive Water Management	IMP				
	RM	IMP				
	Snow Surveys	IMP				

Definitions: INT: Integration - Ensures consistent delivery through coordination among various programs.
TEC: Technical - Information and data collection efforts to support program implementation.

IMP: Implementation - Includes the delivery of DWR programs and support for local programs through financial assistance programs.
RM: Residual Management - Includes the planning, preparing and responding to changing conditions to protect lives and property.

*Gray Text - Not Included in Storybook

Integrating Water Management

Tools

Plans

Actions

Results

Aligning Programs & Initiatives towards *Implementation*

		TOOLS		PLANS	ACTIONS	Results
		TECHNICAL	RISK MANAGEMENT	INTEGRATION	IMPLEMENTATION	
Integrated Water Management	Federal Advocacy	CASGEM	Dam Safety	BDCP	Delta Levee Subvention	
	Technical Publications	CIMIS	Dam Safety Development and Leadership	Central Valley Flood Protection Plan	Delta Special Projects	
	California Water Plan	Floodplain Evaluation & Delineation	F-CO	Conservation Strategy	Early Implementation Program Projects	
	Bond Accountability	Geotechnical System Performance Assessments	FERIS/CDEC	Delta Emergency Response	Flood Control Subventions Program	
	Grants Management System	IWM Economic Assessments	Flood Emergency Operations	DHCCP	Flood Corridor	
	Business Administration	Land & Water Use Data	Flood Project Integrity and Inspections	Interstate Water Management	IRWM Planning & Implementation Grants	
	Climate Change	Public Benefits Evaluation	Flood Risk Awareness	IRWM Strategic Plan	Local Levee Assistance Program	
	Environmental Stewardship	Statewide Data Program	Floodplain Management	Regional Coordination	O&M and Environmental Support	
	Sustainability Indicators Framework	System Feasibility Studies	Hazard Mitigation	Statewide Flood Management Planning	Recreation Planning and Implementation	
	Program Delivery Plans	Systemwide Flood Benefit Evaluation	National Flood Insurance Program	SWAN	Regional Flood Management Plans	
	Project Management Support	Water PIE	Snow Surveys	System Reoperation	Regional Partnership	
	Bond Resources Accountability		Water Use Efficiency	F-BO (?)	San Joaquin River Restoration	
	Safeguarding System (BRASS)		Conjunctive Water Management		Stormwater Grants	
			Water Recycling & Desalination		Surface Storage Investigations	
			Water Transfers		SWP Operations	
				System Maintenance		
				USACE CVFPB Projects		
						USACE CVFPB Studies
						Water Use Efficiency Grants
						Watermaster Services
CROSS CUTTING						

Integrating Water Management

Examples of DWR Programs:

California Water Plan

State's Strategic Framework for Water Management and Sustainable Development

Imperative to Act

A Range of Choices

FloodSAFE CALIFORNIA

PUBLIC SAFETY

Delta Flood Emergency Preparedness, Response, and Recovery Plan

Stephen Bradley - Division of Flood Management - Hydrology and Flood Erosion Office - Strategic Project

The Delta Flood Emergency Preparedness, Response and Recovery Plan is a plan to prepare for, respond to, and recommend recovery from Delta flood emergencies that:

- provides emergency response and recovery guidance for DWR emergency personnel;
- reduces response time for Delta flood emergencies;
- provides initial estimates for time and costs to recover flooded Delta islands; and
- is coordinated with the plans of other Delta flood emergency response partners.

Implementable Plan
by the beginning of 2013.

Begin response facilities construction in FY 2014.

FloodSAFE CALIFORNIA

PUBLIC SAFETY

Flood System Operations and Maintenance

Through routine and non-routine maintenance activities, maintain channel and system storage capacity, ensure level integrity and operability of hydraulic structures, effectively managing the flood control system in a manner that protects and enhances the environment. Routine maintenance for levees and channels includes mowing and burning for vegetation control, growing rodent holes, and hand clearing around endangered species. Non-routine maintenance includes rehabilitation of hydraulic control structures and levee removal and repair of significant erosion sites. Environmental reduction Corridor Management Strategy and the Small Erosion Repair Program.

Routine Maintenance

- 283 miles of levee system management and repair
- 1200 miles of channel vegetation management
- 4 pumping plants
- 11 weirs
- 2 spoil gates
- 50 miles of sand/gravel/mud
- 12 bridges in Santa Cruz coastal drainage channels
- Rodent control

FloodSAFE CALIFORNIA

PUBLIC SAFETY

CALFED SURFACE STORAGE INVESTIGATIONS

"... a new era in surface storage planning, where projects are conceived to support multiple objectives that combine ecosystem restoration and water quality improvements with more traditional purposes of water supply reliability, hydropower, and flood protection"

Mark Coffey
Division, Division of Water Resources
CALFED Surface Storage Program Manager, 2010

SURFACE STORAGE PROJECTS

North-of-100 Delta Outstream Storage

- DWR and U.S. Bureau of Reclamation, with local water interests, are evaluating offstream storage in the northern Sacramento Valley.
- The investigation is evaluating alternatives of 1.27 TAF to 1.81 TAF of storage costing \$14.8-\$15.5 billion.
- The investigation will release a Draft EIR/IS and Feasibility Report to the public in Summer 2012.

Los Vaqueros Extension

- Contra Costa Water District, U.S. Bureau of Reclamation, and DWR have studied expansion of Los Vaqueros Reservoir.
- Construction of an initial expansion from 100 TAF to 160 TAF has begun.
- With additional funding, local, federal, and state partners may study an expansion of up to an additional 240 TAF.

Shasta Lake Water Resources

- U.S. Bureau of Reclamation is leading the feasibility investigation of extending Shasta Lake, in consultation with DWR and local water interests. DWR's participation is funded by the Public Resource Code.
- The investigation is evaluating a dam raise up to 18.5 feet (934 TAF) costing up to \$1.07 billion.
- Reclamation released a Preliminary Draft ES and Feasibility Report in February 2012. A complete Draft ES and Feasibility Report will be released later.

Upper San Joaquin River Basin Storage

- U.S. Bureau of Reclamation, DWR, and local water interests are studying storage projects in the Upper San Joaquin River watershed.
- The investigation has considered initial alternatives with up to 1.26 TAF of additional storage.

FloodSAFE CALIFORNIA

PUBLIC SAFETY **ENVIRONMENTAL STEWARDSHIP** **ECONOMIC STABILITY**

VM-S-6

Integrating Water Management

Timeline of Flood Financing in California

